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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,175	09/12/2003	Clarence E. Thomas	068062.0168	7513

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EXAMINER

LEE, HWA S

ART UNIT	PAPER NUMBER
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2877

DATE MAILED: 10/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/661,175	Applicant(s) THOMAS ET AL.	
	Examiner Andrew Hwa S. Lee	Art Unit 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>4/2/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claims 1-3 and 5-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims recite “replacing” and it is unclear how the reference mirror is replacing the reference object when there is no reference object to be replaced in the first place.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, and 5-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al (US 2002/0145773).

For claims 1 and 8, Tanaka et al (Tanaka hereinafter) show a hologram recording apparatus and method comprising:

an illumination lens operable to focus a reference beam;
a beam splitter (13) optically coupled to the illumination lens by the reference beam; and
a reference mirror (45) located at a waist of the reference beam.

Although Tanaka may not expressly state the functional use of the elements, such as the use of word “operable”, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

With regards to the limitation “such that the reference mirror replaces a reference objective on a reference arm,” that limitation does not further define the structure of the holography system since the claim does not recite a reference object that is in the system thus there is no reference object being replaced. In addition the intention of using a reference mirror to replace a reference objective does not further define the structure of the system. With regards to the method step of replacing in claim 8, if the reference objective is not there in the first place, how can it replace it?

With regards to claim 2, Tanaka only shows a schematic drawing of a beamsplitter and does not expressly state to use a cube beam splitter. Official Notice is taken that cube beam splitters are well known in the art and at the time of the invention one of ordinary skill in the art would have used a cube beam splitter since a cube beam splitter is notoriously well known for splitting beams.

With regards to claim 3, Tanaka shows a $\frac{1}{4}$ wave plate (paragraph [0101]).

With regards to claim 5, Tanaka shows the reference mirror comprises a flat mirror (45).

With regards to claims 6 and 11, Tanaka shows the reference mirror operable to maintain optical symmetry of a reference arm and a target arm.

With regards to claims 7 and 10, Tanaka shows the reference mirror operable to form a first wavefront substantially similar to a second wavefront formed by the reference objective.
(paragraph [0059])

With regards to claim 9, Tanaka shows the reference mirror operable to replace a reference objective.

3. Claims 4 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka as applied to claims 1 and 8 above, and further in view of Zgonik (US 6,781,725).

Zgonik shows confocal holographic optical storage having reference mirror at the waist of the reference beam wherein the laser beam (and thus the reference beam too) is a Gaussian beam (column 4, lines 36+). At the time of the invention, one of ordinary skill in the art would have used a laser source emitting a Gaussian beam for the properties such as least dilation by refraction.

Response to Arguments

In response to applicant's argument that "replacing a reference object", a recitation of the intended use of the claimed invention must result in a structural difference between the claimed

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invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

limitation does not further define the structure of the holography system since the claim does not recite a reference object that is in the system thus there is no reference object being replaced.

With regards to the method step of replacing in claim 8, if the reference objective is not there in the first place, it is unclear how can it replace it.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Hwa S. Lee whose telephone number is 571-272-2419. The examiner can normally be reached on Tue-Fr.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley Jr. can be reached on 571-272-2800 ext 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Andrew Hwa Lee
Primary Examiner
Art Unit 2877